MAI-2016-15

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Metal and Nonmetal Mine Safety and Health

REPORT OF INVESTIGATION

Surface Nonmetal Mine
Construction Sand

Fatal Falling/Sliding Material Accident
December 19, 2016

Roberta Mine
Atlanta Sand and Supply Co., Inc.
Roberta, Crawford County, Georgia
Mine I.D. No. 09-00264

Accident Investigators

Curtis Roth
Supervisory Mine Safety and Health Inspector

Edward D. White
Mine Safety and Health Inspector

Originating Office

Mine Safety and Health Administration
Southeastern District
1030 London Drive, Suite 400
Birmingham, AL 35211
Samuel K. Pierce, District Manager

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OVERVIEW

On December 19, 2016, Richard Anderson (victim), a 62-year old Wash Plant Operator, was fatally injured when he entered the wash plant hopper and became engulfed in sand.

The accident occurred because the mine operator did not ensure that employees used safe and required methods when entering the hopper. The supply and discharge equipment had not been locked out; the victim was not wearing a safety belt or harness equipped with a lifeline suitably fastened. A second similarly equipped person was not present to maintain minimum slack.

GENERAL INFORMATION

Roberta Mine is a construction sand mining operation owned and operated by Atlanta Sand and Supply Co., Inc., located in Roberta, Crawford County, Georgia. The General Manager for the operation is Eric Barger and the Plant Manager is William Wade. Stephen Andrews is the Safety Director. The mine operates two, ten-hour shifts five days per week. The operation currently employs thirty seven miners.

The mine uses hydraulic mining methods (water cannons) to wash sand to a slurry pump. The slurry pump transfers the slurry to a booster pump for transfer to the screening plant. After screening, the material is transferred to a classifier plant and loaded into haul trucks for transfer to the wash plant. After progressing through the wash plant, the material is sent to the dry plant for bagging or for loading into tanker trucks.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on April 5, 2016.

DESCRIPTION OF THE ACCIDENT

Anderson reported to work at his normal starting time of 7:00 p.m. on December 18, 2016, and work progressed normally through the night. The Dry Plant Operator, Eric Braswell, last spoke with Anderson at 3:45 a.m. December 19, 2016, via radio. At 4:15 a.m., Braswell observed Anderson using a front-end loader to fill the wash plant hopper. It was customary for Anderson to radio Braswell every morning at 4:50 a.m. to let him know there were only ten minutes remaining in the shift. Braswell did not receive the usual call at 4:50 a.m., and he thought this was unusual.

Shortly thereafter, Braswell went to the wash plant hopper area and found Anderson's loader running with the door open. Anderson's hard hat and radio were still inside the operator's cab. The loader's bucket was still partially filled with sand as if he stopped while dumping material into the hopper. Braswell checked the control room approximately 50 feet away and found the victim's lunch box. At approximately 4:52 a.m., Braswell walked down to the conveyor belt beneath the hopper and saw Anderson's left foot protruding from the hopper discharge chute. Braswell realized Anderson was engulfed in sand and immediately called Barger to inform him of the accident. Braswell then turned off the running conveyor belt and vibrator. Barger called Andrews to inform him of the accident.

Barger arrived at the mine, observed the situation, and called 911 at 5:21 a.m. The sheriff's department, emergency medical services and the fire department arrived at the mine about 5:40 a.m.

Andrews moved the loader and shut it off at approximately 6:00 a.m. Pit Supervisor Shannon Stribling brought a back-hoe and used it to remove sand from the hopper until

the victim became visible. Robert Cody, Acting Crawford County Coroner, pronounced the victim dead at the scene at 6:34 a.m.

Barger tied off with a safety belt and line, entered the hopper, and shoveled sand into the back-hoe bucket to continue removing sand from the hopper. It became difficult to remove sand while working inside the hopper so Barger exited the hopper and used a water hose to wash sand out from below the discharge. The body was removed at approximately 10:45 a.m.

INVESTIGATION OF THE ACCIDENT

Andrews first attempted to notify MSHA of the accident at 5:05 a.m. by calling the DOLNCC twice, while en route to the site and was disconnected both times. At 5:16 a.m., Andrews called the DOLNCC again and was able to complete his accident notification. The DOLNCC contacted MSHA Southeast District Safety Specialist Michael Evans, an order pursuant to Section 103(j) of the Federal Mine Safety & Health Act of 1977 was verbally issued to the mine operator. Upon arrival of an Authorized Representative, the order was modified to a Section 103(k) order to ensure the safety of miners.

MSHA's accident investigation team conducted a physical inspection of the accident scene, interviewed employees, reviewed training documentation, and examined work procedures relevant to the accident. The investigation was conducted with assistance from mine management and employees. There were no eye witnesses to the accident.

DISCUSSION

Weather

It was cloudy with light rain and light winds and a temperature of 40 degrees Fahrenheit at the time of the accident. Weather was not considered to be a factor in the accident.

Training and Experience

The victim had six years, twenty weeks experience as a miner, all at this mine, and five years, forty weeks experience as a Wash Plant Operator. A substantial part of the victim's duties as Wash Plant Operator included operating a front-end loader to feed sand into the wash plant hopper. A representative of MSHA's Educational Field and Small Mine Services conducted an in-depth review of the victim's training records. MSHA determined that there were no contributory training deficiencies.

Wash Plant System

The wash plant hopper measures ten feet by eight feet by nine-and-a-half feet and holds thirty five tons of sand material. The dump opening measures ten feet, two inches by eight feet. The bumper block to stop the front-end loader is 42 inches high. Sand material is gravity fed through a two feet by two feet discharge opening at the bottom of

the hopper onto the wash plant conveyor belt. The wash plant conveyor belt is approximately 125 feet long and 24 inches wide and is 25 inches below the hopper discharge chute. The conveyor belt feeds the wash plant silo. A vibrator is attached to the hopper structure in order to prevent sand material from adhering to its interior. There was no grizzly or other barrier device in place to stop persons or objects from being pulled downward through the hopper.

When material in the wash plant silo decreases to a certain level, a continuous audible alarm sounds for five seconds before the vibrator and wash plant conveyor belt start automatically feeding the silo. The alarm functioned properly when tested during the investigation. The vibrator and wash plant conveyor belt shut off automatically when the silo becomes full. Controls for manually turning the vibrator and wash plant conveyor belt on and off were also available, and they were located approximately ten feet from the dumping location.

Material is placed on the ground after it has progressed through the wash plant system. The Dry Plant Operator uses a front-end loader to move this material and dump it into the dry plant hopper approximately forty feet away.

The wash plant control room is located next to the silo and is approximately 50 feet from the wash plant hopper. The control room is equipped with electrical control panels for the silo, wash plant conveyor belt, and vibrator.

Boot Prints

Boot prints were found in a manner that indicated someone stood in place on top of the bumper block. The investigators determined these boot prints were made by the victim.

Metal Objects

Two metal objects appearing to be old drum container lids were found in the hopper during the recovery efforts. Anderson would use the loader to scrape material from the ground surface for dumping into the hopper. Investigators believe objects were most likely gathered by the loading action and dumped into the hopper.

Accident Scenario

No one witnessed the accident, but it is believed that Anderson saw the metal objects being dumped into the hopper and he either fell into or stepped onto the sand material while attempting to retrieve them. Evidence supporting this theory includes: the loader was still running when found; the loader bucket was still partially filled; the victim's boot prints were found on the bumper block; and two metal objects were retrieved from the hopper during the recovery operation. It is believed Anderson most likely entered the hopper to remove the metal objects while the vibrator and wash plant conveyor belt were not running, and he could not exit the hopper when the system started automatically. The equipment had not been locked out, and the victim was not wearing a safety belt or harness equipped with a lifeline suitably fastened. A second similarly equipped person was not present to maintain minimum slack.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following root cause was identified:

- *Root Cause:* The mine operator did not ensure the safety of employees by requiring specific procedures for entering the hopper. The supply and discharge equipment had not been locked out, and the victim was not wearing a safety belt or harness equipped with a lifeline suitably fastened. A second similarly equipped person was not present to maintain minimum slack.

  Corrective Action: The mine operator retrained all employees in proper procedures for working in and around chutes and hoppers. In addition, the mine operator fabricated and installed a grizzly at the top of the hopper opening to prevent persons and objects from entering the hopper interior.

CONCLUSION

The victim, Richard Anderson, was apparently attempting to retrieve two metal objects that had been dumped into the wash plant hopper when he became engulfed in sand. The supply and discharge equipment had not been locked out, and the victim was not wearing a safety belt or harness equipped with a lifeline suitably fastened. A second similarly equipped person was not present to maintain minimum slack.

ENFORCEMENT ACTIONS

Order No. 8638782 – issued December 19, 2016, pursuant to Section 103(j) of the Federal Mine Safety & Health Act of 1977 (originally issued verbally and reduced to writing upon arrival of an inspector and subsequently modified to an order pursuant to Section 103(k)):

An accident occurred at this operation on 12/19/2016 at approximately 04:52 A.M. Est. This order is being issued, under Section 103j of the Federal Mine Safety and Health Act of 1977, to assure the safety of all persons at this operation. This order is also being issued to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident. It prohibits all activity at the Wash Plant Hopper/Wash Plant Feed Conveyor, except to the extent necessary to rescue an individual or prevent or eliminate an imminent danger until MSHA has determined that it is safe to rescue normal mining operations at the Wash Plant Hopper/Wash Plant feed Conveyor. This order applies to all persons engaged in the rescue and recovery operation and any other persons on-site. This order was initially issued orally to the Safety Manager at 06:06 A.M. and has now been reduced to writing.

Citation No. 8638783 – issued January 24, 2017, pursuant to Section 104(a) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.16002(c):

On December 19, 2016 a fatal accident occurred at this operation when sand inside the Wash Plant Feed Hopper engulfed a miner. The victim (Wash Plant Operator) entered the sand-filled hopper before the supply and discharge equipment was locked out. The victim was not wearing a safety belt or harness that was equipped with a lifeline suitably fastened with a second person, similarly equipped, as an attendant.

Approved: _____ Date: 2/23/17
Samuel K. Pierce
Southeast District Manager

APPENDIX A – Persons Participating in the Investigation

Atlanta Sand and Supply Company, Inc.

Eric Barger	Operations Manager
Stephen Andrews	Safety Director
William Wade	Supervisor

Mine Safety and Health Administration

Curtis Roth	Supervisory Mine Safety and Health Inspector
Edward D. White	Mine Safety and Health Inspector
Norberto Ortiz	Mine Safety and Health Specialist

APPENDIX B – Victim Information

Accident Investigation Data - Victim Information
Event Number: 0 9 1 6 6 5 8

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee	2. Sex	3. Victim's Age	4. Degree of Injury
Richard C. Anderson	M	62	01 Fatal

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: 12/19/2016 b.Time: 4:52

6. Date and Time Started: a. Date: 12/18/2016 b.Time: 19:00

7. Regular Job Title: 182 Wash Plant and Front End Loader Operator

8. Work Activity when Injured: 053 Loading wash plant hopper

9. Was this work activity part of regular job? Yes X No

10. Experience	a. This Work Activity:	b. Regular Job Title:	c. This Mine:	d. Total Mining
Years	5	5	6	6
Weeks	40	40	20	2
Days	0	0	0	0

11. What Directly Inflicted Injury or Illness? 093 Engulfed in sand

12. Nature of Injury or Illness: 110 Suffocation

13. Training Deficiencies:
Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task:

14. Company of Employment: (If different from production operator)
Operator

Independent Contractor ID: (if applicable)

15. On-site Emergency Medical Treatment:
Not Applicable: | First-Aid: | CPR: | EMT: | Medical Professional: | None: X

16. Part 50 Document Control Number: (form 7000-1)

17. Union Affiliation of Victim: 9999 None (No Union Affiliation)